

CLAIMS

1. A method for measuring the quantity of chemical species contained in a high-temperature gas and especially the quantity of CO and/or CO<sub>2</sub> contained in a gas output by a metal treatment furnace, and especially an electric arc furnace (EAF) or a basic oxygen furnace (BOF) or converter, characterized in that a portion of the gas to be analyzed is taken off, its temperature is lowered down to less than 300°C, preferably down to a temperature of 200°C or below, so as to obtain a gas with a temperature between 300°C, preferably 200°C, and room temperature, and then at least the quantity of CO and/or CO<sub>2</sub> present in this gas is measured by means of the coherent light signal that is emitted by a diode laser through said gas and recovered upon emerging from said gas.
2. The method as claimed in claim 1, characterized in that the concentration of other species in the high-temperature gas is also measured using a diode laser, and especially the concentration of at least one of the species chosen from CO and/or O<sub>2</sub> and/or H<sub>2</sub>O and/or CO<sub>2</sub>.
3. The method as claimed in either of claims 1 or 2, characterized in that the temperature of the high-temperature gas is also measured using a diode laser.
4. The method as claimed in one of the preceding claims, characterized in that a tunable diode laser (TDL) is used whose wavelength is continually adjustable over a wavelength range.
5. The method as claimed in one of claims 1 to 4, characterized in that the coherent light source of the diode laser emits in a near-infrared wavelength range.

6. The method as claimed in claim 5, characterized in that the wavelength range includes the 1581 nanometer wavelength.

5 7. The method as claimed in one of the preceding claims, in which the gas to be analyzed is taken off by means of a probe of axial symmetry, characterized in that the probe includes a part that can move about the axis of symmetry of the probe and can remove the  
10 impurities that have built up on the internal wall of said probe by relative rotation of the part and/or of the probe about the axis.

8. The method as claimed in claim 7, in which  
15 additional pneumatic unclogging means using compressed air are provided.